

## Distance Learning: It's Elementary!



LINDA McDERMON

Fourth-grade students are testing what they have learned about magnets during the hands-on portion of a video-conference.

Rural Hall Elementary School began videoconferencing two years ago. We purchased one Polycom Viewstation FX for approximately \$10,000 and combined it with our school's T-1 line and two large televisions to do IP-based videoconferencing using H.323 technology. This means that we use the Internet to connect rather than dialing in and paying fees for that type of connection. Most of the facilities we use are free, though some charge as much as \$125 per hour.

Read on for descriptions of the videoconference providers we use. You can use their programs in your school, or you can find your own for your grade level, subject area, and needs.

### Carolina Journey

In the Carolina Journey, one fourth-grade class from each region of North Carolina is using videoconferencing to meet and discuss topics. Our fourth graders study our state in social studies, so this is a great way to learn about the other regions of the state from people who live there.

### Colonial Williamsburg

This living history museum offers virtual field trips to help students learn about early U.S. history. Our fifth graders watch these satellite programs on our in-house televisions and telephone questions to a toll-free number. The classroom teachers often follow up with units on explorers, schooling in early America, and so on. For example, each student in Allison Scott's fifth grade class dresses up as an explorer

**I**magine having museums and expert teachers available at your request. In our Rural Hall, North Carolina, elementary school, teachers and students just walk down the hall to the distance learning classroom and connect in a few seconds to tours, scientific experts, and wonderful interactive lessons offered by public institutions. I compile a list of available videoconferences for the year from Web searches, e-mail lists, and the North Carolina Distance Learning Alliance (NCDLA). I compare the conferences to our local and state curriculum and meet with the teachers in each grade level to choose conferences to meet their needs. The teachers choose the conference they want their students to attend. I schedule the choices with the museum and receive the materials sent by the museum.

and gives a report in first person. These are photographed and shared with the school in iMovies on the school news program.

### Fairfax Network

The Fairfax Network offers videoconferences produced by the Fairfax County Public Schools on such topics as science, music, and language arts. These conferences are received by satellite. We watch on our in-house televisions in each classroom, and students phone in questions to be answered on the air. The Meet the Author programs are favorites, and the teachers use these as staff development in reading by writing lesson plans to use with their students about these programs. The author is interviewed by an adult and sometimes by students, too.

### MegaConference, Jr.

In May 2004, one of the second grade classes at our school participated in MegaConference, Jr., along with other classes around the world. Our stu-

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## Costs

dents shared a play about the environment. We saw student presentations about and demonstrations of music, dance, and current events. It was a great way to learn about cultures, people, and our world.

### NASA Distance Learning

NASA offers many distance learning options for schools. We are scheduled to participate in our first videoconferences with NASA this year. We are focusing mainly on the science programs, which include aviation history, planetary exploration, and tracking weather.

### North Carolina Museum of Natural Sciences

The museum offers a wide variety of science conferences. A few we have participated in include Dinosaurs; Migrate, Hibernate, and Pupate; and Animal Tracks and Signs.

In the Dinosaur program, the “hands-on” materials included fossils, replicas, books, pamphlets, and magnifying glasses. The students had direct instruction, then opportunities to work in groups to investigate and answer and ask questions. In Migrate, Hibernate, and Pupate, the students had a moth or butterfly to investigate. They looked for the name of the butterfly, what it eats, where it lives and migrates, and if it hibernates over the winter. Then the groups of students shared what they learned about their butterfly or moth with the rest of the class and the teacher in the museum.

In the Animal Tracks and Signs program, the students looked at models and replicas of animal tracks and scat to determine what the animal was, what it ate, and where you might find this animal. Again, the students shared with the class and experts. This is very interactive, real-time learning.

When you read that the cost of the videoconferencing unit was \$10,000, you might have thought, “my school can never afford that.” We used our school “theme” money one year to purchase it. Theme money is a short-term fund from our county school system given to each school to develop a school-determined idea that enhances instruction. Rural Hall School chose Communications with Distance Learning as its theme.

We likely recouped the cost within a year by saving on field trip costs. For example, it costs about \$1,800 to take one grade level of students on buses to the state museums in Raleigh, North Carolina. Now we go for up to \$125 per class and save a day’s instruction rather than spending it on the bus. This time and money saving provides our students with expert instruction and varied experiences at a reduced overall cost and much reduced time for travel. Of course, this is not to say that we shouldn’t go on field trips, but videoconferencing offers our students many of these experiences each year, whereas they would normally only take one big, expensive field trip a year.

Our PTA has picked up the expenses for us this year, and the only fees we incur are for returning hands-on materials by mail. With more than 100 conferences scheduled, this is estimated to be around \$500 for this school year. When we began, we were paying \$35–\$125 per session.

All in all, the cost is not prohibitive, especially when you consider all that you gain.

### North Carolina School of Science and Math

Another of our sources is North Carolina School of Science and Math (NCSSM). This advanced public high school offers free distance learning classes for all grade levels. One favorite program of fifth graders is Dice and Random Numbers. Students use dice, tallies, and calculators to understand these numbers. The instructors make graphs out of the tallies to demonstrate randomness. Our second graders have enjoyed It's a Gas!, and our fourth graders have participated in Simple Circuits and Magnetic Effects.

### NC Wildlife Resources Commission

This group is building their own studio in Raleigh while currently presenting its classes at the NCSSM studios. Our students have enjoyed programs on raptors, bears, and other animals. Our K–1 students enjoy What's Wild?, a program asking students to look

at animals as pets, animals found in the wild, and animals that belong to both groups. Students manipulate small plastic animals in student-created groups (animals with four legs, animals with no legs, animals that swim, fly, animals that have fur, etc.). The students also use a Venn diagram to visually represent animals that are wild, pets, and animals that belong in both groups.

### TWICE

This Michigan organization (Two Way Interactive Connections in Education) provides access to field trips, shared classes, and projects. After signing up for a free membership, participating classes are paired to work together on topics. Last year on Dr. Seuss' 100<sup>th</sup> birthday, we connected with a middle school in Pennsylvania. One class of our first graders read to the Pennsylvania sixth graders, who, in turn, read and discussed with our fifth graders.

## Further Uses of Videoconferencing

We also use our videoconferencing system for connecting students and teachers to conferences. In September 2004, two of our fifth graders presented to the North Carolina School Library Media Association (NCSLMA) conference in Winston-Salem by videoconference. They told about their videoconferencing experiences as fourth graders. And in October 2004, our staff was able to virtually attend the first Keystone Conference (Making the K-12 Videoconference Connection) in Indianapolis, Indiana. We attended sessions on technology in art, music, reading, and more.

We have also extended the setup by adding a laptop or a document camera to show PowerPoint slides, photos, Web sites, or anything we can shoot with the document camera.

Having been a teacher in an elementary classroom for 15 years before going into the computer lab and then branching out into distance learning, I am impressed with the quality of content that is available now at reasonable costs and at a considerable time savings. This helps the classroom teacher cover many educational objectives, allowing him or her to focus on other objectives/topics. High-quality, time saving, and cost effective, distance learning is truly elementary!

**Standards:** NETS•S 3; NETS•T II  
(<http://www.iste.org/nets/>)

## Resources

Carolina Journey: [http://video.dpi.state.nc.us/eforums/carolina\\_journey/](http://video.dpi.state.nc.us/eforums/carolina_journey/)  
Colonial Williamsburg—Virtual Field Trips:  
<http://www.history.org/history/teaching/eft.cfm>  
Fairfax Network: <http://www.fcps.edu/fairfaxnetwork/>  
Keystone Conference: <http://www.keystoneconference.org/>  
MegaConference, Jr.: <http://www.megaconferencejr.org/>  
NASA Distance Learning: <http://live.larc.nasa.gov/>  
North Carolina Information Highway: <http://www.ncih.net/>

North Carolina Distance Learning Alliance:

<http://www.dlalliance.org/>

North Carolina Museum of Natural Sciences:

<http://www.naturalsciences.org/education/distance.html>

North Carolina School of Science and Math:

[http://www.dlt.ncssm.edu/distance\\_learning/Enrich.htm](http://www.dlt.ncssm.edu/distance_learning/Enrich.htm)

North Carolina Wildlife Commission: <http://www.ncwildlife.org/>

Polycom: <http://www.polycom.com/>

Rural Hall School: <http://ruralhallschool.org/>

Rural Hall's Carolina Journey: <http://web2k.wsfc.k12.nc.us/RHallES/>

Rural Hall's NCSLMA page: [http://web2k.wsfc.k12.nc.us/RHallES/nclsma\\_conference.htm](http://web2k.wsfc.k12.nc.us/RHallES/nclsma_conference.htm)

(click the Distance Learning link on that page for a PowerPoint presentation)

TWICE: <http://www.twice.cc/fieldtrips.html>



Linda McDermon has been distance learning coordinator for Rural Hall Elementary School in Rural Hall, North Carolina, for eight years. Before holding this position, she spent 15 years in first through third grade classrooms. McDermon holds a BS in child development and an MED in early child education from the University of North Carolina at Greensboro and an MA in instructional technology from Appalachian State University.

## Why Ask Why?

Why Files (<http://whyfiles.org>) explores the science, math, health, environment, or technology behind events in the news and presents those topics clearly in a student-friendly format. Based at the University of Wisconsin-Madison, Why Files endeavors to explain the relationship between science and daily life.

The home page changes weekly and offers stories In Depth, In Brief, and In the News. Righthand navigation takes you to Interactives and Cool Science Images. Interactives includes animations of tornadoes, lightning, and snowflakes. The cool images include dozens of photographs divided into categories such as Technology, Biology, Earth & Space, and Physical Science. Click on a photo and you're linked to an article about the image. The site is easy to navigate and offers several ways to search through what at press time is more than 350 articles in a searchable archive. You'll also find a dozen teacher activities on topics such as forensic science, migration, and hurricanes. The Why Files encourages the use of its content for nonprofit, educational activities with appropriate attribution. See the Web site for details.

**Standards:** NETS•S 1–6; NETS•T I–III, V, VI (<http://www.iste.org/nets/>)

*This resource write-up was adapted from 101 Best Web Sites for Secondary Teachers by James Lerman (ISTE, 2005). Lerman serves as coordinator of the New Jersey Consortium for Middle Schools at Kean University and is also available for speaking engagements and consulting projects ([jwwriter@earthlink.net](mailto:jwwriter@earthlink.net)).*